

Small Wind Energy Systems

CITY OF BEDFORD, OHIO

ORDINANCE NO

BEING AN ORDINANCE WHICH ESTABLISHES RULES AND
REGULATIONS FOR THE USE OF SMALL WIND ENERGY
SYSTEMS WITHIN THE CITY OF BEDFORD AND DECLARING
AN EMERGENCY

WHEREAS, the Council of the City of Bedford, Ohio recognizes that due to a number of factors, a greater interest has been expressed in alternative energy sources for both residential and commercial uses, including the use of Small Wind Energy Systems, and

WHEREAS, THE City Council of the City of Bedford believes that regulations are appropriate for Wind Energy Systems to permit their use subject to certain conditions and criteria and to allow City residents and businesses to take advantage of wind energy equipment while attempting to protect Bedford's historic character and ensure the health, safety and welfare of the citizens of Bedford, and

WHEREAS, the Council of the City of Bedford, Ohio recognizes that strong enforcement of the Codified Ordinances of the City of Bedford is necessary to preserve the public health and safety, and

WHEREAS, it is also recognized and agreed by the Council of the City of Bedford, Ohio that strong enforcement of the Codified Ordinances requires just and appropriate penalties for violations of these Ordinances,

NOW, THEREFORE

BE IT ORDAINED by the Council of the City of Bedford, County of Cuyahoga, and State of Ohio:

Section 1. That the Council hereby declares by the adoption of Chapter 1961 of the Codified Ordinances hereto attached that said rules and regulations for the use of Wind Energy Equipment are in the interest of the public peace, health, safety, and welfare of the citizens of the City of Bedford.

Section 2. That this ordinance is declared to be an emergency measure immediately necessary for the public peace, health, safety, and welfare and for the reason that it is necessary to enact this Ordinance at the earliest possible time to prevent the installation of Wind Energy Equipment within the City of Bedford in the absence of the necessary regulation.

Section 3. That Chapter 1961 of the Codified Ordinances of the City of Bedford as it relates to the regulation of Wind Energy Equipment within the City of Bedford shall read as follows:

CHAPTER 1963

WIND ENERGY SYSTEMS

1963.01 Purpose

The purpose of this ordinance is to:

- (1) Oversee the design, use, siting and permitting of wind energy turbines (WET)
- (2) Preserve and protect public health, safety and welfare without significantly increasing the cost, or decreasing the efficiency of a wind energy system.

1963.02 Definitions

In this ordinance:

- (1) "Administrator" means the City of Bedford Building Commissioner.
- (2) "Ambient Sound Level" means the amount of background noise at a given location prior to the installation of a SWET which may include, but is not limited to, traffic, machinery, lawnmowers, human activity and the interaction of the wind with the landscape. The ambient sound level is measured on the dB(A) weighted scale as defined by the American National Standards Institute.
- (3) "Anemometer" means the temporary wind speed indicator constructed for the purposes of analyzing the potential for utilizing a wind energy turbine at a given

site. This includes the tower, base plate, anchors, cables and hardware, wind direction vanes, booms to hold equipment, data logger, instrument wiring, and any telemetry devices that are used to monitor or transmit wind speed and wind flow characteristics over a period of time for either instantaneous wind information or to characterize the wind resource at a given location.

- (4) "Board" means the City of Bedford Planning Commission.
- (5) "Decommissioning" means the process of terminating operations and completely removing a WET(s) and all related buildings, structures, foundations, access roads and equipment.
- (6) "Medium Wind Energy Turbine (MWET)" means a tower-mounted wind energy system that converts wind energy into electricity through the use of equipment which includes any base, blade, foundation, generator, nacelle, rotor, tower, transformer, vane, wire, inverter, batteries, or other components used in this system. The MWET has a nameplate capacity of between 31 and 250 kilowatts. The total height of the system shall not exceed 150 feet.
- (7) "Meteorological Tower" (met tower) means the tower, base plate, anchors, guy cables and hardware, anemometers (wind speed indicators), wind direction vanes, booms to hold equipment, anemometers and vanes, data logger, instrument wiring, and any telemetry devices that are used to monitor or transmit wind speed and wind flow characteristics over a period of time for either instantaneous wind information or to characterize the wind resource at a given location.
- (8) "Net-Metering" means the special metering and billing agreement between the utility company and their customers which facilitates the connection of renewable energy systems to the power grid.
- (9) "Owner or Operator" means the individual or entity that intends to own and/or is responsible for the day-to-day operation and maintenance of the small wind energy system in accordance with this ordinance.
- (10) "Rotor diameter" means the cross sectional dimension of the circle swept by the rotating blades of a WET.
- (11) "Shadow Flicker" means the moving shadow, created by the sun shining through the rotating blades of a WET. The amount of shadow flicker created by a WET is calculated by a computer model that takes into consideration turbine location, elevation, tree cover, location of all structures, wind activity and sunlight.
- (12) "Small Wind Energy Turbine (SWET)" means a wind energy system that
 - (a) Is used to generate electricity;
 - (b) Has a nameplate capacity of 30 kilowatts or less; and
 - (c) Has a total height of 100 feet or less.

NOTE: A structure-mounted WET shall have a nameplate rating not exceeding 10 kilowatts and shall not exceed a height of 15-feet measured from the highest point of the roof excluding chimneys or antennae.

- (13) "Total height" means the vertical distance from ground level to the tip of a WET blade when the tip is at its highest point.
- (14) "Tower" means the monopole, freestanding, or guyed structure that supports a wind energy turbine (WET).
- (15) "Wind Energy Turbine" (WET) means a wind energy system that is used to generate electricity;

NOTE: A structure-mounted WET shall have a nameplate rating not exceeding 10 kilowatts and shall not exceed a height of 15-feet measured from the highest point of the roof excluding chimneys or antennae.

- (16) "Wind generator" means the portion of a WET that includes blades and associated mechanical and electrical conversion components mounted on top of the tower.

1963.03 Standards

A Small Wind Energy Turbine System (SWET), including the associated anemometer and/or meteorological tower, shall be a conditional accessory use in all zoning districts subject to the following requirements;

A Medium Wind Energy Turbine System (MWET), including the associated anemometer and/or meteorological tower, shall be a conditional accessory use in Business and Industrially-Zoned Districts only and shall be limited to parcels of 5-acres or larger subject to the following requirements;

The use of energy from an approved Wind Energy Turbine System (WET) shall be intended only for the energy requirements of the principal use of the parcel on which the system is located. This requirement is not intended to prohibit the sale of excess power generated at times from the system.

- (1) Setbacks. A wind tower for a small wind system shall be set back a distance equal to its total height from:
 - (a) any public road right of way, unless written permission is granted by the governmental entity with jurisdiction over the road;
 - (b) any overhead utility lines, unless written permission is granted by the affected utility;
 - (c) Any occupied structure, not including garages or storage buildings;
 - (d) all property lines;
- (2) Height; The total Height of any SWET or MWET shall not exceed 100 feet in any Zoning District in conjunction with Section 1951.02(c) of these ordinances.

- (3) Ground Clearance; The lowest extension of any blade or other exposed moving component of the WET shall be at least 15-feet above the ground at any point of the natural grade within 30-feet of the WET and, in addition, at least 15-feet above any outdoor surfaces intended for human use, such as balconies or roof gardens, that are located adjacent to the WET.
- (4) Access.
 - (a) All ground mounted electrical and control equipment shall be labeled or secured to prevent unauthorized access.
 - (b) The tower shall be designed and installed so as to not provide step bolts or a ladder which is readily accessible to the public for a minimum height of eight (8) feet above the ground.
- (5) Noise; Noise emanating from the operation of the WET shall not, at any time, exceed the lowest ambient sound level that is present between the hours of 9:00 p.m. and 9:00 a.m. at any property line of a residentially zoned parcel, and shall not exceed by more than 5 dB(A) the ambient noise level at any non-residentially zoned parcel.
- (6) Vibration; Vibrations shall not be produced by the WET which are humanly perceptible beyond the property on which the WET is located.
- (7) Guy Wires; Guy wires shall not be permitted as part of the SWET system.
- (8) Electrical wires. All electrical wires associated with a small wind energy system, other than wires necessary to connect the wind generator to the tower wiring, the tower wiring to the disconnect junction box, and the grounding wires shall be located underground.
- (9) Lighting. A wind tower and generator shall not be artificially lighted unless such lighting is required by the Federal Aviation Administration.
- (10) Appearance, Color and Finish. The wind generator and tower shall remain painted or finished the color or finish that was originally applied by the manufacturer, unless approved in the building permit. Paint or finishes shall be non-reflective and shall be maintained free of rust and corrosion by the operator throughout the life of the equipment.
- (11) Signs. All signs, other than the manufacturer's or installer's identification, appropriate warning signs, or owner identification on a wind generator, tower, building, or other structure associated with a small wind energy system visible from any public road shall be prohibited.
- (12) Quantity; No more than one (1) WET shall be permitted on any parcel of property or on any property composed of two or more contiguous parcels.
- (13) Code Compliance. All wind energy systems, including towers, shall comply with the Ohio Building Code and the National Electrical Code. All

foundations or mounting systems for WET's shall be designed under the seal of an Ohio-registered design professional. Special Inspections may be required to determine compliance with applicable requirements. Wind Energy Systems shall not be structure-mounted on one, two or three-family dwellings

- (14) Utility notification and interconnection. Small wind energy systems that connect to the electric utility shall comply with "Rules for Interconnecting Distributed Generation Facilities."
- (15) WET towers shall be permitted under the same standards, permit requirements, restoration requirements, and permit procedures as a small wind energy system.
- (16) Efficiency; The applicant shall submit along with the structural data an overview of the project that includes adequate information as to existing wind speed and potential, height of tower in relation to surrounding structures or foliage, and the proposed generating capacity in relation to yearly consumption of electricity on property.

1963.04 PERMITS AND FEES;

A. An application fee for the **Zoning Permit** in the amount of \$100.00 (One Hundred Dollars) shall be paid at the time of submittal of the application to the Building Commissioner. The application fee shall be non-refundable in the event of denial of the application. Only one application fee shall be required for any application provided that re-submittals of the application that become necessary are received by the Building Commissioner within 30-days of the issuance of a review letter or denial of the permit. Upon approval of the application, the **Zoning Permit** shall be issued at no additional cost.

B. Upon issuance of the **Zoning Permit**, additional construction documents and/or manufacturer's data or details may be required before installation. A **Building Permit** and/or an **Electrical Permit** shall also be necessary and shall be issued at the current cost of those permits for Residential or Commercial installations. All installations shall comply with the current editions of the Ohio Building Code, the Residential Code of Ohio and/or the National Electrical Code. Panels and the related mounting systems shall be designed to support the live, snow load of 30 pounds per square foot and the wind load of 80 miles per hour.

1963.05 Permit Requirements

A. **Application for Zoning Permit:** An applicant who seeks to install a wind energy turbine system shall submit an application for a zoning permit, as provided by the City of Bedford, Ohio. The application shall include a site plan showing the streets and rights-of-way, property lines of the subject property as well as the property lines of the neighbors that are

immediately adjacent, all required setbacks and clearances to the proposed WET, all existing structures on both the subject property and the neighboring properties immediately contiguous, and the location of all above-ground utilities. The application shall also include photographs of the existing conditions of the property, as well as renderings of the proposed WET and the manufacturer's brochure or printed information of the proposed system.

B. Review of Application:

1. Upon receipt of a completed application for the installation of a wind energy system, the Building Commissioner shall:

a) Act within 30 days from the date of receipt of the application to review the application for compliance with this Section. If it is determined that the applicant is in compliance, he shall refer the application to the Bedford Planning Commission to review the application. Should the Building Commissioner determine that the application is not in compliance with this Section, a review letter shall be sent to the applicant itemizing the violations.

b) A Planning Commission hearing shall be held within 30 days of the determination by the Building Commissioner that the application is in compliance with this Section. The Planning Commission shall either recommend approval of the wind energy system or, within thirty (30) days, recommend alternatives to the applicant. If the Planning Commission recommends approval of an application, the Building Commissioner shall issue a permit for the work provided that the application complies with the requirements of this Section. If the Planning Commission recommends alternatives to the applicant, no permit shall be issued until the applicant formally acknowledges that he or she has received the recommendations of the Planning Commission. Recommendations of the Planning Commissions shall be advisory only, and shall not be considered as grounds for approving or denying an application.

c) Upon receiving the recommendation of the Planning Commission, the Building Commissioner shall, within fourteen (14) days, either approve or deny the application. Should the application be denied, the applicant may either withdraw the application completely, modify the application in such a way as to bring all aspects of the project into compliance with this Section, or request an appeal of the Building Commissioner's denial of a Zoning permit. Appeals of the order shall be heard by the Bedford Board of Zoning Appeals in a timely manner.

2. Regardless of the action of the Planning Commission, the Building Commissioner shall have the authority to impose reasonable conditions to safeguard the public health, safety and welfare.

1963.06 Abandonment.

- (1) A small wind energy system that has not been used to generate electricity or has otherwise been out-of-service for a continuous 12-month period will be deemed to have been abandoned. The Administrator may issue a notice of Abandonment to the owner of a small wind energy system that is deemed to have been abandoned. The Owner shall have the right to respond to the Notice of Abandonment within thirty (30) days from Notice receipt date. the Administrator shall withdraw the Notice of Abandonment and notify the Owner that the Notice has been withdrawn if the Owner provides information that demonstrates the small wind energy system has not been abandoned.
- (2) If the small wind energy system is determined to be abandoned, the owner of a small wind energy system shall remove the wind generator from the tower at the Owner's sole expense within three (3) months of receipt of Notice of Abandonment. If the Owner fails to remove the wind generator from the tower, the Administrator may pursue a legal action to have the wind generator removed at the Owner's expense.

1963.07 Building Permit Procedure.

- (1) An Owner shall submit construction drawings in triplicate to the Building Commissioner along with an application for a building permit for a small wind energy system.
- (2) The Building Commissioner shall issue a permit or deny the application within one (1) month from when the construction drawings and application is received.
- (3) The Administrator shall issue a building permit for a small wind energy system if the application materials show that the proposed small wind energy system meets the requirements of this ordinance.
- (4) If the application is approved, the Administrator will return one (2) signed copies of the application and construction drawings with the permit and retain the other copy with the documents for Departmental use.
- (5) If the application is rejected, the Administrator will notify the applicant in writing, and provide a written statement of the reason why the application was rejected. The applicant may appeal the Administrator's decision. The applicant may re-apply if the deficiencies specified by the Administrator are resolved.
- (6) The Owner shall conspicuously post the building permit on the premises so as to be visible to the public at all times until construction or installation of the small energy system is complete.

1963.08 Administration and Enforcement.

- (1) This ordinance shall be administered by the Building Commissioner or other official as designated.
- (2) The Administrator may enter onto any property for which a building permit has been issued under this ordinance to conduct an inspection to determine whether the conditions stated in the permit have been met.
- (3) The Administrator may issue orders to abate any violation of this ordinance.
- (4) The Administrator may issue a citation for any violation of this ordinance.

1963.09 Severability.

The provisions of this ordinance are severable, and the invalidity of any section, subdivision, paragraph, or other part of this ordinance shall not affect the validity or effectiveness of the remainder of the ordinance.

1963.10 Violations.

It is unlawful for any person to construct, install, or operate a wind energy system that is not in compliance with this ordinance, or with any condition in a building permit issued pursuant to this ordinance.

1963.99 Penalties.

- (1) Any person who fails to comply with any provision of this ordinance or a building permit issued pursuant to this ordinance shall be guilty of a first-degree misdemeanor, punishable by a fine of up to \$1,000 per day of violation or imprisonment for up to six months, or both.
- (2) Nothing in this section shall be construed to prevent the City of Bedford, OH from using any other lawful means to enforce this ordinance.